

WHAT IS CLAIMED IS:

1.           An intake throttle valve apparatus, comprising:  
            an intake throttle valve including a valve housing, a valve shaft rotatably supported within said valve housing and a valve element fixedly mounted on said valve shaft for changing an opening area of an intake passage formed internally of said valve housing,  
            a reduction gear mechanism operatively coupled to said intake throttle valve, and  
            a driving motor operatively coupled to said reduction gear mechanism so that a driving force of said driving motor is transmitted to said valve shaft through the medium of said reduction gear mechanism for thereby changing said opening area of said intake passage through rotation of said valve element,  
            wherein said reduction gear mechanism is composed of an output gear fixedly secured to a motor shaft of said driving motor and an input gear fixedly secured to said valve shaft at one end thereof and directly meshing with said output gear.
2.           An intake throttle valve apparatus according to claim 1, wherein module of said output gear is in a range of "0.4" to "1.0" with the number of teeth thereof being in a range of "4" to "8", while module of said input gear is in a range of "0.4" to "1.0" with the number of teeth thereof being in a range of "70" to "100".
3.           An intake throttle valve apparatus according to claim 1, wherein said output gear is so mounted on said motor shaft that a gear-tooth portion is distanced from the tip end of said motor shaft in the axial direction.
4.           An intake throttle valve apparatus according to claim 1, wherein said output gear is fabricated through a sintering process or alternatively a cold forging process.
5.           An intake throttle valve apparatus according to claim 1,

wherein said output gear is secured to said motor shaft by press-fitting.

6. An intake throttle valve apparatus according to claim 1, wherein said valve housing is formed of a resin.
7. An intake throttle valve apparatus according to claim 1, wherein said intake throttle valve apparatus is designed to be installed on a gasoline engine car whose cylinder volume is 1.0 liter or less.